WORK PLAN AND METHODOLOGY

a) Problem Formulation and Identification of Research Problem

b) Preparation of Questionnaire on Likert scale

c) Identification and Contact with the E-Retail Customers

d) Filling up the questionnaire from customers for primary data

e) Fetching and extraction of secondary data from assorted authentic and valid sources

f) Implementation of statistical approaches and techniques for data analytics and interpretation of results

g) Evaluation of hypothesis based on the results obtained from data interpretation

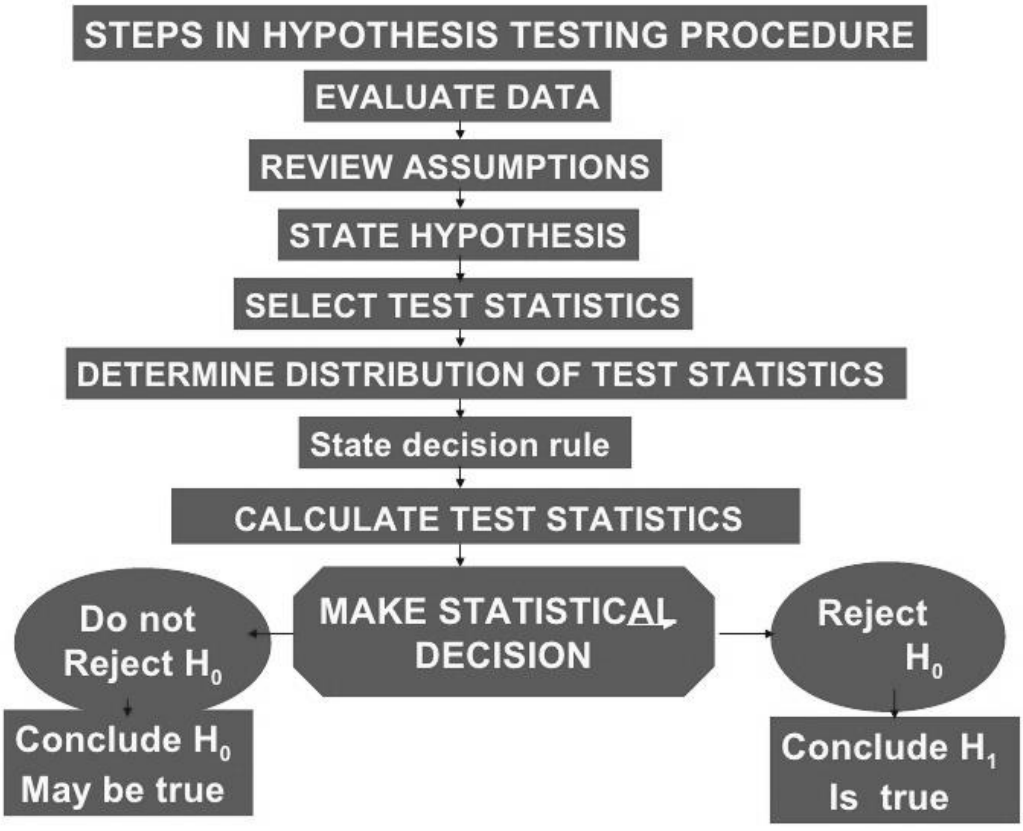

Figure 1.4 - Flow Diagram of Hypothesis Testing

This above figure 1.4: is related to research aspects and basic flow diagram of the research approach and methodology. In this figure, the multiple phases of the proposed research work is explained with the steps involved for accomplishing the research task.

Tools for Techniques for Data Analysis

To empirically test the satisfaction level of location branding initiatives from the local residents using a survey questionnaire and to fill the gaps identified, the following tools and techniques have been used:

- Frequency Analysis
- Chi-Square Test
- ANOVA
- Correlation

Using Frequency Table analysis, the overall score/feedback can be analyzed from multiple respondents to the questionnaire.

For predicting the level of satisfaction, we can conduct Duncan Mean Test (comparative analysis), ANOVA (To know mean Difference), Correlation (To know the factors relationship) and Multiple Regression Analysis (To Know the impact of the factors).

"Surveys are effective at data collection method. However, insights develop after the fact and arise from our statistical research analysis. One of those techniques currently on my favored list is the tried and true analysis of variance (ANOVA).

If we are collecting metric data from our surveys, in the form of responses to a Likert scale, the amount spent on a product, customer satisfaction scores, or a number of purchases made then we open the door for analyzing differences in average score between respondent groups. If we are comparing two groups at a time (e.g. men vs. women, new vs. existing customers, employees vs. managers, etc.) then it is

appropriate to use a t-test to assess the significance of any differences. However, if there are more than two groups it becomes necessary to look to another technique.

ANOVA, or its non-parametric counterparts, allow you to determine if differences in mean values between three or more groups are by chance or if they are indeed significantly different. In the table below respondents in a restaurant survey rated three diners on overall satisfaction. The null hypothesis is there is no difference in satisfaction between the three restaurants. However, the data seems to imply otherwise.

ANOVA makes use of the F-test to determine if the variance in response to the satisfaction questions is large enough to be considered statistically significant.

The proper use of ANOVA in analyzing survey data requires that a few assumptions be met including normal distribution of data; independence of cases, and equality of variance (each group's variance is equal). If these assumptions cannot be met, then there are non-parametric tests available which do not require these assumptions.

Data by itself is just that. However, when we judiciously employ statistical tests we can create insight that can have a positive impact on our marketing efforts."

Tools and Techniques for Secondary Data Analysis

In the last decade, it was observed the panel data analysis was becoming central to analysis in econometrics, especially for social and behavioral science. However, panel data could have more complicated clustering or hierarchical structure. To analysis the available secondary data in this research manuscript the following statistical tools are used:

- Frequency Table
- Average Analysis
- Global Maximum (MAX) Function
- Correlation analysis
- Regression Analysis

The MIN and MAX functions are just what the names imply. MIN will find the lowest number in a range, while MAX finds the largest number in a range. One advantage of these functions is that they can be combined with the IF function.

Using Frequency Table analysis, the overall score/feedback can be recorded and logged in the specific format so that related statistical functions can be implemented.

In statistical data interpretation, there are a number of ways of measuring *central tendency* or, as it is more commonly called, the average for a set of values. These methods include the *arithmetic mean*, the *median*, and the *mode*.

The most commonly calculated measure of central tendency is the arithmetic mean - or simple average - and it is calculated by adding a group of numbers together and then dividing by the count of those numbers. The average function returns the average (arithmetic mean) of the arguments. Using this function, the inference can be drawn on the overall dataset from all the years about average values on multiple parameters including exports, imports, trade balance and related others. Using this function, the overall average or arithmetic mean of the dataset records can be evaluated.

The Average function measures central tendency, which is the location of the center of a group of numbers in a statistical distribution. The three most common measures of central tendency are:

- Average, which is the arithmetic mean, and is calculated by adding a group of numbers and then dividing by the count of those numbers.
- Median, which is the middle number of a group of numbers; that is, half the numbers have values that are greater than the median, and half the numbers have values that are less than the median.
- Mode, which is the most frequently occurring number in a group of numbers.

Sample size

The dataset with sample size of 800 respondents A sample of 800 Participants in form of e-retail clients from the states of Telangana and Andhra Pradesh including Hyderabad, Warangal, Vishakhapatnam and Vijayawada evaluated on Likert Scale and open and closed ended questioned are been framed for this present research study

The earlier title of SERVQUAL is currently named as RATER Model.

R - Reliability

A - Assurance

T - Tangibility

E - Empathy

R - Responsiveness